

ager of the Works. His resignation was received with great reluctance by the Company. After considerable persuasion he consented to serve in the capacity of consulting engineer. The Company was exceedingly fortunate in having at hand at this juncture a man thoroughly capable and available for the office of manager. Mr. C. Hedemann was the natural successor to Mr. Young.

The Iron Works, as the institution appears today, through the endeavors of its two successive managers, meets all requirements and is a great credit to the town and country. Anything from repairing a rolling pin to turning out a complete mill outfit, or equipping a steamer with machinery, is undertaken and successfully carried out with neatness and dispatch. During the busy summer and autumn season, roller mills, boilers, triple effects, vacuum pans, water piping, molasses tanks and innumerable parts of machinery were being manufactured, while the great repair shops were in full blast. Most of the time as many as 275 men were employed. The services of every available mechanic in the city were secured and a number of skilled artisans were brought down from San Francisco for special work in the shops. Machinery was in motion all day and, most of the time, well into the night.

A trip through the works is a rare treat, and affords the only definite means of gaining an idea of the magnitude of the business there carried on. Fronting on Queen street is a large two-story building, which will be recognized as the front entrance to the Works. Down stairs is the general business office where all contracts are ratified and the business of the Works is carried on. There manager Hedemann has a desk. Up stairs is the draughting room, where all the plans for contracts are drawn. This department has the appearance of the main room of an architectural firm in a great city.

Parallel with the building just described, but running back half through the block, is another, a brick structure, in which are located the most important shops of the Works. In it is the foundry, where the greatest machinery is manufactured and handled with the smallest amount of muscular force. Here from 30 to 40 tons of iron casting is turned out every week. Next to it, though adjoining the same department, is the blacksmith shop, where anything from a small bolt to an immense mill shaft is constructed.

There are three machine shops, all equipped with the most modern appliances. Back of them is the smith's department, another large building. Off in the lower yard is the boiler shop, a most important adjunct of the works. Out of it have come the largest boilers in the country today. Plantation mills have been equipped and a majority of the boilers used by the island steamers have been supplied from this shop.

With Mr. Hedemann, the manager over all, no man has done more for the success of the enterprise in the past year than Mr. James A. Kennedy. That gentleman has conducted negotiations, had charge of the principal contracts and carried out the business part of each one of them.

Another important factor in the works is Mr. R. C. Montague, head of the draughting department. By him all plans of contracts taken by the concern are prepared, and every detail is carefully figured out. Other important functionaries are: Cushingham, foreman machine shop; James Lyett, foreman boiler maker; Thomas Smith, foreman moulder; H. C. Reid, foreman pattern maker; Chas. Crozier, foreman blacksmith.

Coming back to the works again, it may be added that, on account of the unprecedented increase of business during the past year, it has been found necessary to build a new and larger machine shop. In it, besides the routine of heavy machinery, there will be a crane capable of lifting 40 feet in the clear. This will handle with ease the largest and heaviest piece of machinery in the Islands.

The future of the works is established. It fills a most important mission, and does it in the most satisfactory manner. The most courteous treatment is accorded all who have business with the establishment. Employing, as is done, the most skilled mechanics to be procured, the work of the shops has been eminently satisfactory in every respect.

#### SODA WATER

#### Consolidated Soda Water Works Co., Ltd.

A review of the business enterprises of the country would be far from complete without a description of the establishment that provides the necessary aerated beverages for a thirsty community.

Founded in 1863 by Messrs. Hollister & Hyland it has now been in constant operation for 34 years, and to estimate the output in that period of time would be an impossibility.

Other establishments have been started only to be eventually absorbed in what is now the "Consolidated Soda Water Works Co., Ltd.," representing as it does the Soda Water Works of John A. Palmer & Co., Crystal Soda Works, Tahiti Lemonade Works and Hollister & Co., the successors of the original founders.

The consolidation of interests and works enables them to manufacture high grade goods on an economical basis, thereby supplying their patrons at prices lower than the same quality are sold for in the United States.

One idea has been adhered to throughout a long business career, and that is, an absolute purity of the beverages sent out. To this end an elaborate filtration plant, furnishing absolutely pure water, is in constant operation.

The advantage of this is evident, for, while removing the ordinary mechanical impurities, recent experiments carried on in Providence, R. I. and other eastern cities, have shown that the method in use in this factory successfully removes all the forms of bacteria and organic life. The water, after passing

the purifying apparatus, does not come in contact with any metals but pure black tin.

The machinery used in carbonating the water is a combination of the "Continuous" and "Intermittent" systems, which experience has demonstrated to be the best for this climate. The sugar used in the syrups is a specially refined article, free from color and other "whiteners." Over 400 lbs. a day of this one item is consumed.

The only acid employed in the syrup flavors is the pure concentrated juice of the lemon imported from Europe. Some idea of the business may be gained from learning of the enormous importation of bottles required to make good the loss by breakage and carelessness of patrons. During 1896 over 424 dozen or 57,888 bottles were imported, a recent shipment bringing 24,192 at one time.

The system of washing the bottles, apparently a trivial matter, receives in this factory as much attention as any other detail. When the bottles are ready to be filled they are as clean as brushing and washing can make them.

The works employ a force of sixteen men and keep five delivery wagons in constant use.

#### HAWAIIAN CYCLE & MFG. CO.

#### Bicycles Made to Order in Honolulu.

A show window that is attracting special attention at present is that of the Hawaiian Cycle and Manufacturing Company, 312 Fort street, where is exhibited the new bicycle, "Hawaii," built by that firm.

This wheel marks the advent of a new industry, as it is the first one ever put up in Hawaii.

Following the example of nearly all American manufacturers, the Hawaiian builders have contracted for the various parts of their wheel from specialty manufacturers only, believing that a factory devoting its entire attention to the making of but one part can turn out a much more perfect article than where their intelligence is diverted into many different channels. No part of the wheel is manufactured here.

The wheel on exhibition is built on graceful lines, and has a substantial and pleasing appearance. It will make a handsome roadster. Only one has been turned out thus far, but others are being built.

The wide range of territory covered by the local firm in selecting the component parts of the wheel, testifies to the care and trouble they have exercised to secure the best of everything. Mr. Pearson, the manager, kindly furnished the advertiser the following list, showing from what source the parts have come: Rims, from Indiana; spokes, from Massachusetts; hubs and crank hangers, Illinois; saddles, New York and New Jersey; balls, Connecticut; cranks and pedals, Illinois; handles and chains, Indiana; tires, Illinois; Ohio and Connecticut; small fittings from Ohio.

The company states it to be their intention to put on the market a bicycle that is strictly up-to-date in every particular, without embodying any of the fads that are used for advertising purposes, and which are really detrimental instead of beneficial to a wheel. The wheel is guaranteed for one year. Mr. Pearson states that it costs \$20 more to put up the wheel than to purchase a high-grade machine outright. He recites this, as showing the confidence the firm has in the material they are using. Owing to the time required in getting the parts from the various manufacturers, a large output of wheels will not be attempted before March.

#### ORDWAY & PORTER.

#### Upholstering Department Gives a Place in Manufacturers.

If Ordway & Porter are not extensive manufacturers of furniture, they at least do enough in this particular line of work to entitle them to a position among the manufacturers of Honolulu. While they are essentially dealers in furniture they also make to order such pieces as may be desired by their customers. They have engaged during the year a large force of men, whose work is in the upholstery department, where they manufacture a large number of mattresses. They also make a specialty of upholstering chairs and couches, the frames for which are brought from the Coast. The firm will also manufacture frames to order when desired.

The store of Ordway & Porter in the new Waverley block is one of the handsomest in the city. Two large show rooms are at all times well filled with high-class furniture, imported from the United States. The arrangement of the goods is such as to make an attractive display.

#### CATTON, NEILL & CO.

#### Capable Machinists and Iron Founders.

An enterprise that is making rapid strides is that conducted by the above firm on Queen street, in the premises at one time occupied as the National Iron Works.

The members of the firm are well known machinists and iron founders having lived on the Islands for a number of years. They build and make repairs for all kinds of sugar machinery or steam engines. The firm is not looked upon as a competitor of the Honolulu Iron works but it is branching out steadily and constantly adding machinery to the works. Since they began business four months ago they have had 10 men constantly employed. They have an extensive iron and brass moulding department in their establishment, employing throughout only Hawaiian and white labor.

## HAWAII'S FINANCES.

### Statement From Minister Damon's Report for Year 1896.

The report of S. M. Damon, Minister of Finance, demonstrates that the year 1896, was the most prosperous in the history of the Hawaiian Islands. Following is the current account balance sheet for the year 1896:

Cash on hand Dec. 31, 1895	\$ 22,496.30
RECEIPTS.	
Customs Revenue	\$ 656,895.82
(Expenses, \$66,912.16)	
Postal Revenue	77,488.94
(Expenses, \$62,495.41)	
Internal Revenue	1,240,937.12
	1,975,321.58
EXPENDITURES.	
General Expenses	\$ 1,651,631.33
Interest on all Loans	236,459.59
Matured Bonds Paid	16,100.00
	\$ 1,904,190.92
Cash on hand Dec. 31, 1896.	93,627.26
	\$ 1,997,818.18
	\$ 1,997,818.18

The comparative statement showing the increase and decrease in expenditures and receipts for the years 1895 and 1896, gives an increase in receipts for 1896 of \$235,256.69 and decrease in expenditures of \$104,923.27. One of the principal sources of revenue is the Customs Bureau which for the year 1896, shows a total net increase in receipts of \$109,746.78.

Of the \$7,164,561.40 worth of imports for 1896, \$5,464,208.20, or 76.27 per cent. was from the United States. From other countries the imports were: Great Britain, 10.54 per cent.; China, 4.17 per cent.; Japan, 3.86 per cent.; Germany, 2.06 per cent.; Australia and New Zealand, 1.58 per cent.; and the balance of less than 1 per cent. from other countries.

Of the \$15,515,230.13 worth of exports for 1896, \$15,460,098.15, or 99.64 per cent. went to the United States.

The total exports and imports amounted to \$22,679,719.53, or \$8,491,635.84 more than in 1895, and \$2,574,760.92 more than the best previous year. Of the total export and import trade \$20,924,306.35 or 92.26 per cent. was with the United States, 3.33 per cent. with England, and the remaining 4 per cent. with about a dozen countries.

American vessels carried 82.53 per cent. of the exports and imports, British vessels 7.93 per cent., Hawaiian vessels 5.26 per cent., German vessels 2.98 per cent., and other nationalities 1.30 per cent. A large proportion of the tonnage registered under British and other nationalities was chartered by American firms or steamship companies.

The following table shows briefly the number, tonnage and nationality of the vessels entered and cleared at all the Customs districts in the Republic:

NATIONALITY	ENTERED			CLEARED		
	No	Tonnage	Per cent	No	Tonnage	Per cent
American	247	243,983	51.04	243	238,213	51.21
British	88	175,120	36.63	85	173,678	37.33
Hawaiian	26	25,049	5.24	26	27,061	5.82
German	8	9,705	2.03	5	5,292	1.14
Japanese	9	16,735	3.50	8	15,158	3.26
All Others	8	7,405	1.56	6	5,706	1.24
Total	386	477,997	100.	373	465,198	100.

The Postal Bureau shows a revenue for the past year of \$77,488.94; an increase of \$16,770.10. The expense of conducting this Bureau has been \$62,495.41.

The total number of letters and prints received in 1896, was 692,979; and the total dispatched was 407,667. There were 32,800 money orders issued and 27,893 paid.

Referring to the proposed relations with the United States, Minister Damon treats with the questions of whether or not the United States can afford to assume the national debt of \$4,000,000, on which interest was paid in 1896 to the amount of \$236,459.59. He takes the two bureaus which would be taken over by the general government, the Customs Bureau and the Postal Bureau, and deducting the duties now paid on American goods not exempt from duty, and the running expenses of both bureaus from the receipts, he finds a net income of \$429,935.87. Deducting the amount of interest paid on the National debt in 1896, from this net income he finds a surplus of \$193,476.28.

As a result of so much time being spent by the Legislature in the last session on the subject of taxation the total amount of collections for the year past amounted to \$706,541.70, showing an increase of \$113,849.78 over the previous year.

The total revenue received from the Commissioners of Public Lands amounted to \$96,549.47, an increase of \$42,483.13 over the previous year.

#### H. HACKFELD & CO.

#### Big Commission House—Its Fertilizer and Coffee Establishment.

The great house of H. Hackfeld & Co., one of the largest on the Pacific Ocean side of the world, was established by Captain Henry Hackfeld on October 1, 1849.

Captain Hackfeld was, prior to that time, master of a sailing vessel and was engaged in trading between China, Honolulu and the American coast. Attracted by the business prospects of this country, he, having married and decided to settle down, left the sea and, accompanied by his young wife and brother-in-law, J. C. Pfeuger, then a lad of 16, came to Honolulu.

Mr. Hackfeld's business venture was launched in the old storehouse next to the establishment of J. T. Waterhouse on Queen street. Four years later Mr. Pfeuger was taken in as a partner. Business improved rapidly and a move was soon made to the house now occupied by Waterhouse's crockery store. In the meantime extensive shipping interests were built up and a branch office was established in Germany. Mr. Hackfeld bought several vessels in the following few years, and thus imported his goods in his own ships.

In 1861, Mr. Hackfeld returned to Germany to look after the business at that end of the line, leaving Mr. Pfeuger sole manager here. From that period the business increased by leaps and bounds. Enlarging upon their shipping enterprise, the firm controlled the first steamer line between San Francisco and Honolulu. In 1875, the present premises were secured from the Government and the business was transferred to that place. J. C. Glade, H. W. Schmidt and others officiated as managers at different times up to 1881. During this period Mr. Pfeuger made several trips to Germany and finally died there on October 5, 1883. Mr. Hackfeld died October 20, 1887, aged 71.

In 1881, Messrs. H. Hackfeld, J. C. Pfeuger and J. C. Glade became silent partners. At the same time Paul Isenberg, Sr., H. F. Glade and John F. Hackfeld, the latter a nephew of the original head of the house, entered the firm as active partners. About the same time a number of plantations, among them Wai'anae, were established with their financial aid. In 1889, Mr. Schmidt retired, and in 1894, Mr. H. F. Glade left the business and returned to Germany.

In 1890, Messrs. Hackfeld & Co. became identified with the Laysan Island guano enterprise. This island is practically covered over with a rich fertilizer. The firm secured a lease of the property and then sent vessels down to bring the guano to Honolulu. A station was established and a number of men were sent to the island to get the fertilizer in shape for shipment. For a while the fertilizer was handled in its crude state, but it was soon seen that it must be chemically prepared for the soil and efforts in that direction were begun. The services of Dr. Averdarm, an experienced chemist, were secured and he directed many of the plans which have since been carried into effect. While preparing fertilizers for market, as he could with the, then, limited facilities, he planned the great works at Kalihi, which promise to furnish ere long all the manufactured fertilizers required by the plantations of this country.

In the latter part of 1893, Messrs. Hackfeld & Co. and G. N. Wilcox of Kauai organized The Pacific Guano and Fertilizer Co., having as its object the manufacture and sale of standard fertilizers. A site for the works of the company was selected in a tract of level land at Kalihi, bounded by the Oahu railway on one side and the Government road on the other. The plot was covered with kiawe trees, some lanterns and rocks, and seemed at first a little uninviting for the enterprise. Ground was broken in March, 1894. Large gangs of men were put to work, and soon the place was cleared and railway sidings were laid to the spot where the new buildings were to be erected.

Then, like "Mushrooms in a night," the mammoth factory buildings and warehouses went up. The first one was the three-story structure to accommodate the big acid vats. Next came the manufactory, in which the crude stuff is carried through what seems an endless chain of machinery, until it is pulverized and ready for the addition of chemical properties. By the side of this was built the engine house, containing two of the largest boilers in the country. Across the track, in front, two immense warehouses were erected, and another has recently been built on the Ewa side. Mauka, fronting on lanes leading to the Government road, are neat cottages, about a dozen in number, occupied by the heads of the various departments in the works.

In about six months all the factory buildings were up and the machinery was in motion. In the meantime two large cargoes of guano had arrived from Laysan Island, and on this the start was made. The first year about 6000 tons of high grade fertilizers were turned out. But the demand was far greater than the supply, and a pressing necessity for greatly increasing the capacity of the works at once manifested itself.

Plans were drawn for arrangements which would double the output. These were submitted to Mr. Paul Isenberg, one of the promoters of the enterprise, and had to await his presence in the country. Upon looking over what had been accomplished, Mr. Isenberg at once sanctioned the additional outlay. More machinery was procured, most of which was manufactured here, and the plans for increasing the factory and warehouse capacity, which has since been done, were adopted.

During the year 1896 all that had been outlined in the way of improvements was accomplished. During 1897 over 15,000 tons, or about as much as the supply of crude material will stand,

will be turned out. Various grades of fertilizers, to meet the demands of the soil it is required to treat, are manufactured. The enterprise is one of the largest and most important in the country. Since its establishment high grade fertilizers have come into general use, and to this fact is due in a large measure the great increase in the sugar output for 1896 over that of preceding years. The industry employs a force of 50 men.

Another important industry into which the house of Hackfeld & Co. has more recently launched is coffee. Of the 7000 bags shipped to this market last year, the firm handled over 3000, or nearly half. They have purchased 300 acres of fine coffee land near Hilo, which will ultimately be devoted to the crop. A new warehouse, ground for which will be broken next week, at Wai'anue and Front street, Hilo, will be used largely for receiving and storing coffee as it arrives from the plantations.

A short time ago complete machinery for preparing the coffee for market arrived and will be placed next week. A large warehouse to accommodate it, and also as a convenience in handling the product, has been erected and is now ready for occupancy at the corner of Fort and Queen streets, Honolulu.

The machinery at hand is quite elaborate and will handle all the coffee the country will be able to produce in years. It consists of a huller, polisher and assorter. The beans are thrown first in the huller and come out clean. They are then conveyed to the polisher where a more delicate process of cleaning is gone through with. Finally the grades are separated and fall into their respective containers. This latter process is beautifully accurate and regulates precisely the coffees handled according to market standards. This enterprise is new; so new, in fact, that no practical results have yet been attained. It is certain, however, that with the yearly increase of coffee production, it will prove a great success as a business venture as well as a great convenience to producers and jobbers.

#### PLANING MILLS.

#### Good Business Built by Lumber Manufacturers.

Among the manufacturers of Honolulu those connected with the building interests of the Islands form a prominent part. Honolulu has several well equipped mills for the preparation of lumber for building purposes and in the number the "Enterprise Mill Co.," the principal stockholders being Peter High, Dr. J. S. B. Pratt and Bernhard Johanson.

The mill property extends from Alakea to Richards street below Queen and contains all the latest improved machinery to be found in any establishment of this character. The firm employs about thirty skilled carpenters and men accustomed to handling wood working machinery. In addition to a large contracting business in the construction of buildings the firm executes orders for mill work on lumber and ships many thousand feet to points on the other Islands. The machinery is never idle and during the past year with the phenomenal increase in building operations the force of men has been increased. In connection with the mill there is a building devoted to use as an office and draughting rooms.

#### J. A. Hopper.

Opposite the mill just mentioned, J. A. Hopper conducts one of a similar character. He does not, however, take contracts for building, his business being confined principally to mill work for carpenters or builders. His engines are never idle and his employees are always busy.

#### M. W. McCHESNEY & SONS.

#### Soap, Leather, Coffee and Fruit Their Specialty.

The wholesale grocery firm known as M. W. McChesney & Sons is located on Queen Street, nearly opposite Kaahumanu, and directly fronting the boat landing. The building occupied by them has two floors and two main entrances, the principal one being on Queen Street and the other on the water front. A notable fact about the house today is that it is always jammed to the doors with merchandise, and there is at all times the hum and bustle of business within its walls.

The house of M. W. McChesney & Sons was established in 1879 by Matthew Watson McChesney, father and grandfather of respectively the present proprietors, R. W. and F. W. and J. M. McChesney. The elder McChesney was a native of New York. He was a tanner by trade; and immediately upon his arrival in Honolulu established a tannery with a small grocery annexed to it. This was the beginning of the great house forming the subject of this sketch.

For a time the old gentleman was assisted in his enterprise by his two sons, H. N. and R. W. McChesney. In 1888, however, he died at the ripe age of 83, and the sons came into control of the business. A year later H. N. McChesney sold his interest to his brother, and the latter took his sons, F. M. and J. M., into full partnership with him.

From that time forward the strides made by the house have been almost phenomenal. Its trade grew beyond Honolulu, and before 1896 had spread out to every part of the Islands. Thrift on the part of the firm; a principle of the best goods for the lowest market figure, and square dealing with the customer has made this possible.

In 1885, the Honolulu Soap Works was established with McChesney & Sons as the prime movers behind it. It was a new and doubtful enterprise; but what it lacked in promise the firm supplied in extra push. Of course the business grew and paid and proved